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Structural Volatility in Argentina: A Policy Report

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Acknowledgments

This report is one of a series of brief studies aimed at identifying and hinting at possible solutions to the main sources of volatility in several Latin American economies. This series is being directed by the author of this report by request from the Office of the Chief Economist at the IADB. I am particularly grateful to Fernando Broner for his insightful collaboration and effort, to Ricardo Hausmann for extensive discussions on both the methodology and the specifics, to Mark Aguiar, Victor Beker, Eduardo Borensztein, Vittorio Corbo, Gaston Gelos and Julio Rotemberg for useful suggestions, and to Fernando Broner, Guido Lorenzoni, Eric Parrado, and Laura dos Reis for excellent research assistance. I am also indebted to AEI, where part of this report was written, for their hospitality and support. None of them, and in particular the IADB, is responsible for the opinions expressed in this report.

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1. Summary and General Recommendations

The Argentine economy has experienced a dramatic transformation during the 1990s. Inflation is a matter of the past due to a strong convertibility law; the government is no longer an important player in the production of goods and services; trade and capital accounts have been largely liberalized; the pension system has been modernized and partially privatized; the banking sector's solvency, transparency and liquidity have been solidly raised; and so on. Signs of success abound.

An important exception to this rosy scenario is the untamed, or even increased, volatility of output and employment. The goal of this report is to identify, and hint at potential remedies for, the structural causes of Argentina's volatility.

The shocks behind this volatility have changed over time. During the 1980s their source was mostly domestic–e.g., stabilization attempts and their failure–but in the 1990s volatility has been sparked mostly by external factors. As with many other emerging economies, (a) *weak international financial links* have played a central role in the two crises faced by Argentina during the post-convertibility era. While external factors seem to have started recent crises, their impact has been magnified and, at times fostered, by deficiencies on the domestic front. There are at least three strongly complementary domestic amplification mechanisms in modern Argentina: (b) *A recurrent credit crunch and financial underdevelopment problem*;[1] (c) *a fragile fiscal situation and a multiple-layers crowding-out mechanism that includes the government and large firms*; and (d) *a pervasive profit and collateral squeeze mechanism brought about by a rigid labor market and exchange rate system*.

These domestic deficiencies, which are tested and stressed by external shocks, are at the same time likely factors behind the weak international financial links. This complementarity creates a harmful process of volatility-feedback, but it also hints at the potential synergies of a multidimensional policy package aimed at these problems simultaneously.

[1] See Caballero and Krishnamurthy (1998) for a model of some of the interactions between weak international financial links and underdeveloped domestic financial markets.

While not the exclusive factor, the convertibility system is a central ingredient in the three domestic amplification mechanisms highlighted above. Since there are very good reasons, rooted in the stability of the payments system, not to abandon such a system in the near future, policy reforms must work within its constraints. Argentina's technocratic economic team has recognized this and has set an example of good liquidity management within a "currency board" system. Argentina has made substantial progress, especially on item (b) and some aspects of both (c) and (d) over the last five years.

In a nutshell, and in accordance with the deficiencies highlighted above, this report contains policy recommendations on four general items:

1) *Improve external financial links and the use of these links during crises.* With this goal in mind, there are at least four slightly more specific recommendations and considerations:
   a) Adopt international standards on contractual enforcement, disclosure, and corporate governance.
   b) Implement an active policy of export promotion in order to reduce the international "illiquidity" of Argentina's productive structure.
   c) The government and large corporations should be given incentive mechanisms so that they will internalize their "privileged" position with respect to foreign investors and financiers during crises.
   d) While dollarization could in principle enhance Argentina's international collateral, this measure is unlikely to help much– and may even reduce collateral– without improvement on fundamentals and the other aspects of vulnerability discussed in this report (see below).

2) *Continue and accelerate the path of domestic financial deepening.* In particular, consider:
   a) The possibility of channeling the resources of retirement and pension fund administrators (in Spanish, abbreviated as AFJPs) to develop some of these markets, as well as developing regional markets.
   b) More generally, fostering and nurturing the development of well supervised

institutional investors is an efficient mechanism to delegate the enforcement of good corporate governance standards to the private sector, as these institutions often ponder such factors in their investment decisions.

c) While foreign banks from OECD nations often come with solid built-in supervision from their homeland, they may not always facilitate the smoothing of sharp aggregate contractions as much as equivalent domestic banks do. This poses a delicate tradeoff. This said, the solution to this potential problem is not to limit foreign banks' participation, but to ensure that structurally important financial lines remain open when needed.

3) *Give very high priority to the reduction of the public debt burden problem.* To this effect, there are two type of measures which, while clearly sub-optimal in the long run, may prove helpful in the short and medium run:

a) Fiscal convertibility clause. While the availability of counter-cyclical fiscal policies is a blessing in normal OECD-like circumstances, it is not of much use when the nature of the crises is mostly one of loss of confidence by international financial markets. Thus the cost of losing this policy tool during the typical Argentine recession may not be large relative to the gains associated with a healthy fiscal stance during good times.

b) Limits on the collateralizability of the provinces' co-participation receipts.

4) *Address the fundamental incompatibility between labor market rigidities and a highly inflexible exchange rate system, coupled with very low world inflation*. Although this report endorses the idea of dealing with the former, while postponing any potential flexibilization of the latter, I briefly surmise concerns about dollarization as well.

On the labor market side, several issues should be considered:

a) The process of labor market reform should be continued, perhaps by reintroducing some form of "temporary contracts." While the latter has proven ineffective in dealing with structural unemployment in Europe, it may provide an important buffer to economies like Argentina's which are occasionally subject to very large shocks. The tension between structural damage and cyclical benefits can be dealt

with by making temporary contracts contingent on aggregate conditions (i.e., only acceptable during recessions).

b) It is not clear whether the dominant cyclical inflexibility in wages at this time is real or nominal. While both forms of rigidity feed into each other, their solutions are quite different. Given the current exchange rate system, nominal rigidities will largely fade away with the passage of time, and with sustained low inflation, rather than through deregulation.

c) In the short run, reforms aimed at reducing the non-wage component of labor costs should be fast-tracked, but they must work in conjunction with offsetting fiscal adjustments so as not to further expose a fragile fiscal situation. At this time, supply incentives should have a higher payoff than demand incentives, justifying the tradeoff.

On dollarization, and at an even more conjectural level than the discussion above, I surmise that:

a) While it is wise to discuss the issue in the midst of a crisis, it is probably not a good idea to actually implement it. Given the near irreversibility of the dollarization decision, it does not seem sound to adopt it unless long-run considerations support it, and this is highly unlikely (at least as a unilateral action).

b) Moreover, the short and medium run advantages of dollarization may have been exaggerated.

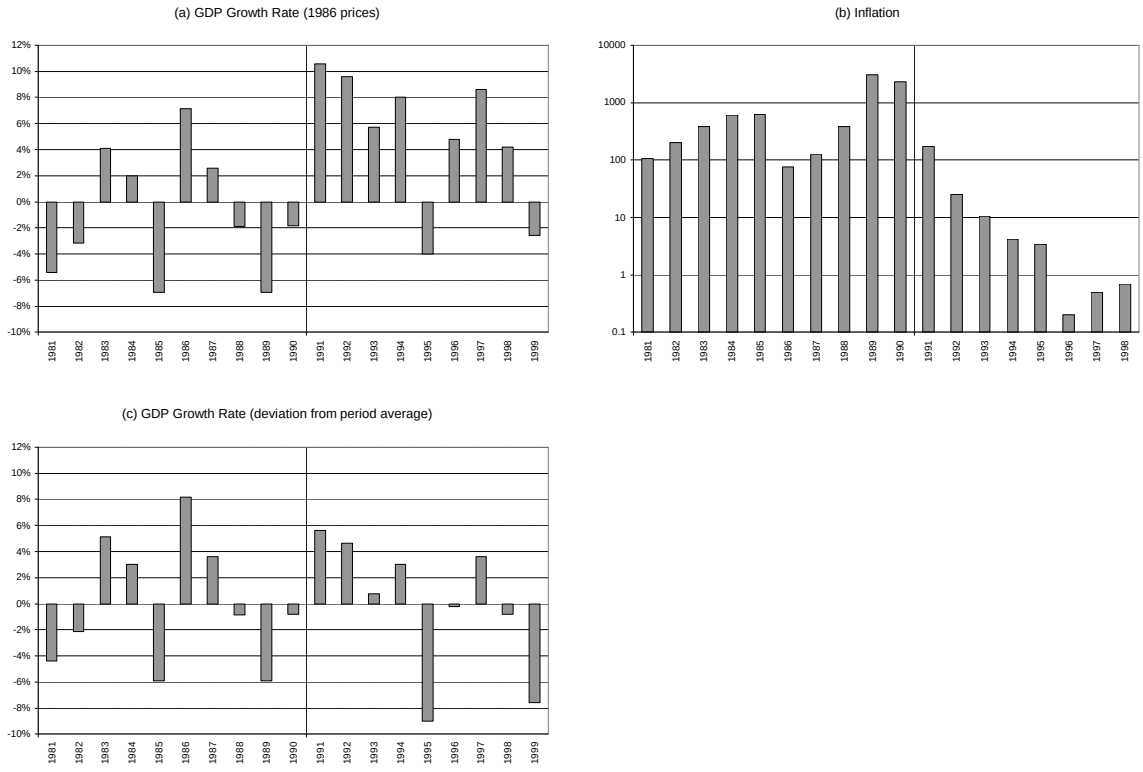
The rest of this report supports these diagnoses and recommendations when possible, given the data available. Elsewhere this report highlights their conjectural nature in some instances, and in others suggests further research needed to make these conjectures more precise.

2. The Facts and Mechanisms

2.1 Aggregate Volatility

Volatility of the real side of the economy remains high. While panels (a) and (b) in Figure 1 highlight the clear success in terms of increased growth and dramatic inflation stabilization attained during the post-convertibility period (delimited by a vertical line in the figures), panel (c) shows that output volatility has not been tamed. The last panel portrays the rate of GDP growth minus the average growth rate for the corresponding period (pre- and post-convertibility). Not only has volatility remained high, but the relative contribution of deep crises (skewness), as opposed to a regular business cycle, has risen.

Figure 1: Growth and Volatility: Pre vs. Post-Convertibility

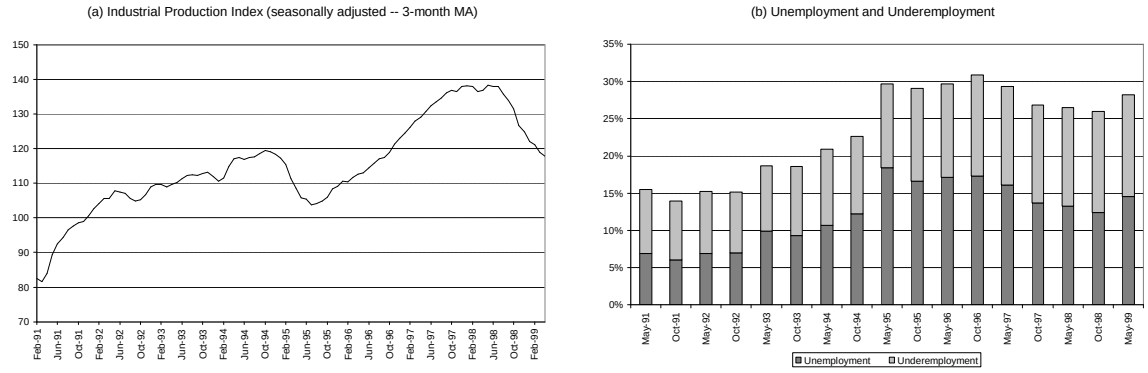


Notes: Pre-convertibility period: 1981-1990. Post-convertibility period: 1991-1999. Used preliminary data for 1998 and predicted data for 1999.

Source: IFS.

There have been two sharp crises during the post-convertibility phase, as shown by panel (a) in Figure 2. The Industrial Production Index dips following the Mexican crisis at the end of 1994, and it does so again after the Asian crisis, gradually at first, and then with increasing strength as the Russian and Brazilian crises intensify. Panel (b) shows the path of unemployment and underemployment, both building up as structural reforms take place and then being sharply boosted by the "Tequila" crisis. Due to the normal lags in the response time of unemployment to a crisis, we probably have not yet seen the worst unemployment numbers brought about by the current crisis.

Figure 2: Post-Convertibility Crises



Notes: Industrial production data from Estudio Broda. Underemployment includes both "demandantes de empleo" and "no demandantes de empleo".

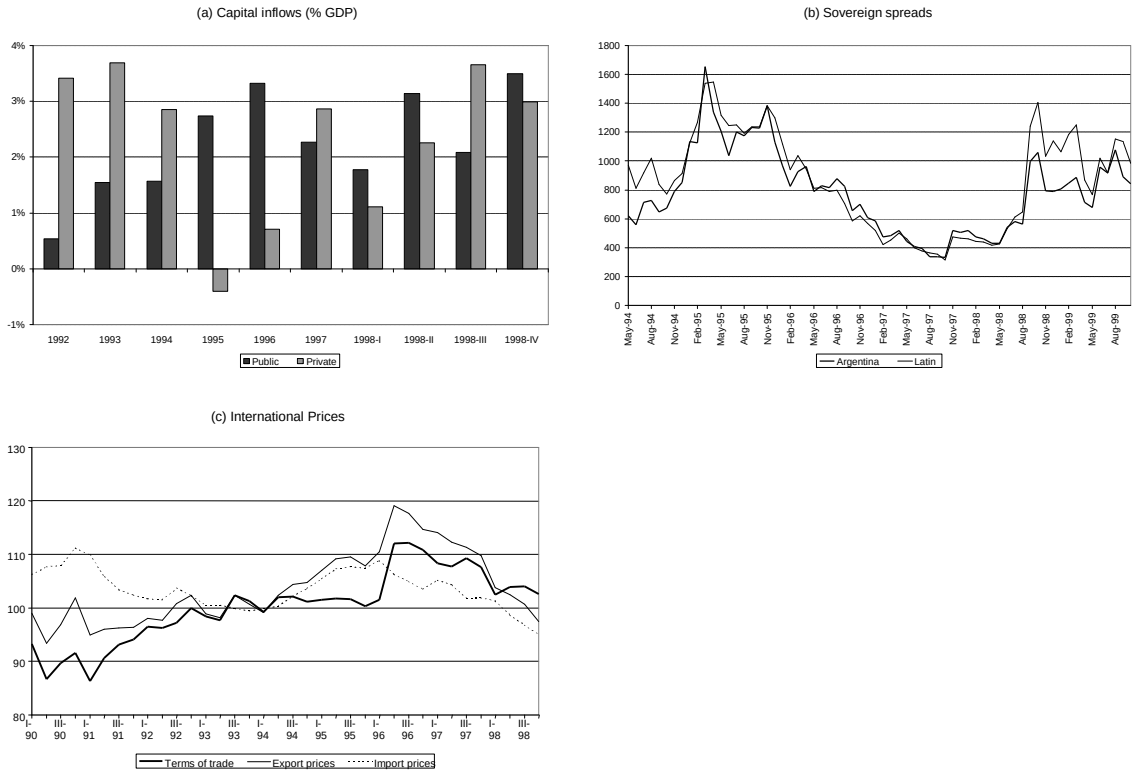
Source: Estudio Broda, and INDEC.

2.2 Weak International Financial Links and Other External Shocks

The relatively small size of emerging economies' current account deficits is a perennial indication of their limited access to international capital markets. Argentina is no exception; its current accounts deficit has never exceeded four percent of GDP during the 1990s, despite the fact that its average growth rate has exceeded five percent, more than double that of the OECD nations during the same period.

With respect to aggregate volatility, however, it is not only the level but also the fragility in this limited access which matters. Panel (a) in Figure 3 illustrates the path of capital flows to Argentina, and their close connection with the two crises of the 1990s, especially the "tequila" episode. Stark as it is, this figure underestimates the severity of the external constraint during crises since it ignores strained renegotiations and other mechanisms that smooth capital flows movements.[2] Some of the underestimate can be determined from price data; the thick line in panel (b) shows the price index of Argentine sovereign debt**,** which exhibits dramatic drops around the crises dates.

Figure 3: External Conditions During Latest Crises



Source: Capital inflows from IFS (columns 78bcd and 78bjd). Panel (b): Spread of Brady bonds yeld vs. US benchmark (30 years). Latin is the average of Argentina, Mexico, Brazil and Venezuela. Source: Datastream.. International prices from INDEC.

[2] The capital flows reversal during the last crisis can be seen more clearly in the non-financial private sector, where they came down to US$2.7 billion in 1998, from US$8.2 billion the previous year. Official flows rose, on the other hand, supported by loans from the World Bank and IADB.

The thin line in the same panel portrays the price index of Latin American sovereign debt. The high correlation between this series and Argentina's does not free Argentina from its share of responsibility for the weak nature of its international financial links, but it does illustrate that the shocks are not a purely domestically-driven phenomenon.

Panel (c) plots the terms of trade, export prices, and import prices, respectively. It is apparent that while these helped Argentina during the tequila crisis and its recovery phase, they have negatively affected it during the recent crisis.[3] However, since Argentina is a fairly closed economy it is highly unlikely that terms of trade and competitiveness shocks can be responsible for anything significant, unless leveraged many times by the other problems highlighted here.

At a more conjectural level, Figure 4 illustrates yet another dimension of the weak and volatile international financial links. Panel (a) uses U.S. stock returns data to illustrate the variance of returns over a three-month-period centered on the indicated date.

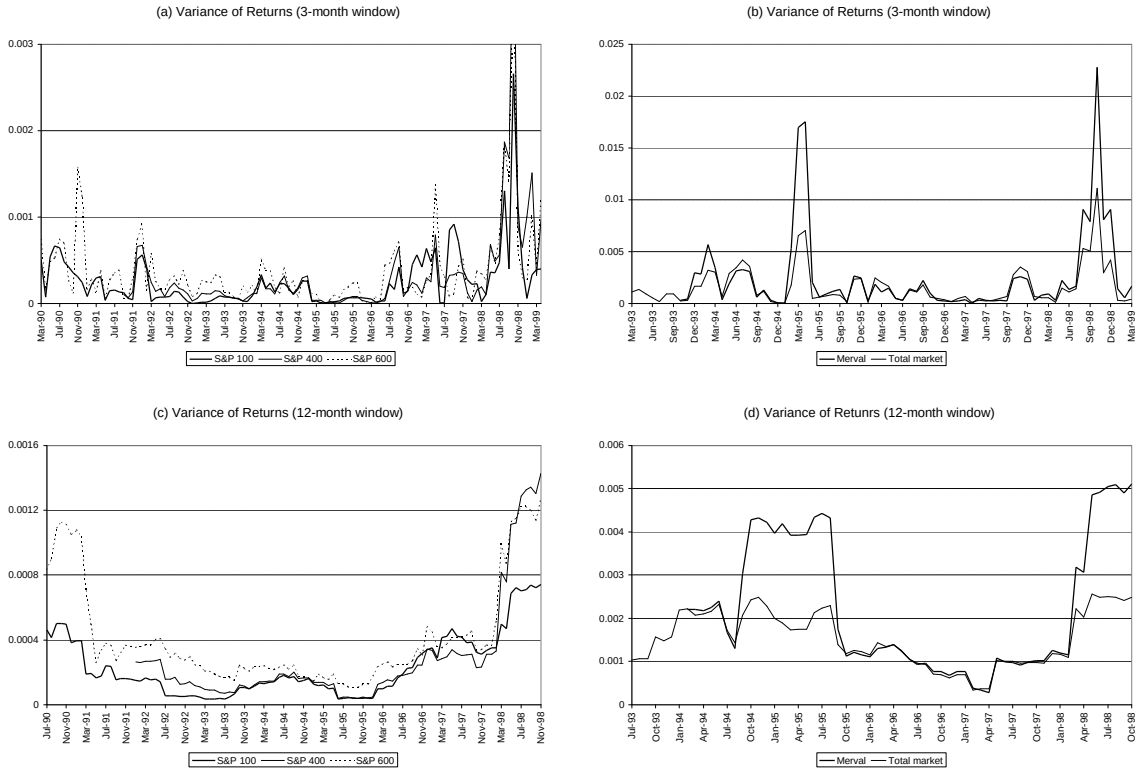
The thick line corresponds to a prime-firms' index (S&P100), while the other two represent more inclusive indices (S&P400 and S&P600). As one would expect, the more inclusive indices are more volatile, especially at times of aggregate turbulence and distress, reflecting the greater vulnerability of smaller firms. Panel (c) is similar but illustrates a 12-month period. This sensible volatility ranking is in sharp contrast with that found in Argentina.

Despite the fact that the relative vulnerability of small firms is at least as large in Argentina (see below) as in the U.S., the pattern of relative volatility portrayed in panels (a) and (c) is reversed for Argentina. This can be seen in panels (b) and (d), which plot with a thick line the variance series for the MERVAL (Argentine prime-companies index) and with a thin line that of the a more comprehensive index (IGPSA). One

[3] In a closely related point, many have argued that had it not been for the massive overvaluation of Brazil at the time of the "tequila" crisis, Argentina's currency board system would have collapsed then.

interpretation of this finding is that foreign investors focus mainly on the MERVAL, and hence it is mostly these stocks that reflect large capital flows swings.[4]

Figure 4: Variance of stock returns. United States vs. Argentina



Source: Stock market data from Datastream.

Finally, Table 1 compares the performance of several Argentine sovereign bonds with that of several U.S. corporate bonds of equivalent rating. The conclusions must be interpreted cautiously, since it is difficult to assess the relative diversification features of these different bonds and spreads, and it is also well known that the volatility of "junk" bonds varies over time. This said, the results are stark enough to support the

[4] Another interpretation is that the finding is spurious, as the more comprehensive series is polluted by too many no-trades. Although this remains as a possibility, aggregate volume data for both indices do not reveal a pronounced relative decline of transactions in the IGPSA. It is also important to realize what the relative-volatility claim in the text is not about: it does not say that large firms' financing is more distressed than that of smaller firms during crises. Indeed, reality is quite the opposite, as concerned local banks reallocate their loans toward larger companies. It just says that an important segment of the demand for the shares of prime companies fluctuates with international sentiment about emerging markets.

interpretation that Argentina's bonds' returns are "excessively" volatile. The table reports the average spreads of these instruments over U.S. Treasury instruments, as well as the variance of these spreads and that of their changes.

Table 1: Comparing Argentine Sovereign Bonds and U.S. Corporate Bonds of Similar Rating

	S&P rating	Moody's rating	Spread average	Spread variance	Variance of spread changes
Argentine Sovereign Bonds	BB-	B1	4.28	2.25	0.36
	BB	Ba1	5.11	3.10	1.74
	BB		4.65	3.97	2.66
	BB	B1	4.59	4.12	1.76
Average			4.66	3.36	1.63
U.S. Corporate Bonds	BB		1.92	0.48	0.07
	BBB-	B1	3.38	0.62	0.41
	BB-	B1	4.50	0.49	0.23
	BB-	B1	4.49	0.44	0.15
	BB-		3.17	1.32	0.48
	BB		2.97	0.67	0.10
	BB-	B1	3.36	1.02	0.28
	BB-		4.91	6.51	2.13
Average			3.59	1.44	0.48

Notes: Spread average means average over bond lifetime (or starting at earliest date available in Datastream). Argentine Sovereign Bonds: ARGENTINA-PAR G/R 93-23, ARGENTINA 11 3/8% 97-17, ARGENTINA 11% 96-06, ARGENTINA 8 3/8% 93-03. U.S. Corporate Bonds: FRUIT OF THE LOOM 7% 81-11, MAXUS ENERGY CORP. DEB 8 1/2% 89-08, SEA CONTAINERS 12 1/2% 93-04 (B), SEA CONTAINERS 12 ½% 92-04 (A), AK STEEL HOLDING CORP. 10 3/4% 94-04, CLARK OIL REFINING 9 1/2% 92-04, BETHLEHEM STL.CORP. DEB 8.45% 86-05, TRSP.MARITIMA MEXICO 9 1/4% 93-03.

Source: Bond data from Datastream.

The evidence is quite clear: relative to U.S. corporate bonds, Argentine bonds pay a higher spread and their returns are substantially more volatile. Moreover, the spread-premium is probably a result of this "excess volatility." As Figure 3 has shown, the bulk of this volatility comes from episodes when financial markets tighten for emerging markets. Argentine bonds look "illiquid" from the point of view of spreads and volatility, despite the fact that their volume is often much larger that that of the specific U.S. corporate bonds described in the table.

In sum, the level of capital flows is low.[5] The volatility of terms of trade and competitiveness does not seem large enough to justify the volatility of these flows and their price, unlike that of U.S. prime-firms' stocks (which are the target of foreign investors) are more volatile than more comprehensive stock indices. Finally, Argentine bonds pay a higher spread and are more volatile than U.S. corporate bonds of comparable credit rating. While each piece of evidence is only "circumstantial," these data appear to add up to a convincing case that the connection of Argentina with international financial markets is weak.

2.3 Domestic Amplification Mechanisms

2.3.1 The Credit Crunch and Financial Underdevelopment Problem

In general, the development of domestic financial markets is instrumental not only in fostering investment and growth, but also in aggregating resources in times of distress. Underdeveloped financial markets limit the prompt reallocation of resources and, as a result, cause wasteful contractions in those most affected by shocks or those less plugged into the financial pipelines. On the other hand, as financial development rises so does leverage, and with it the fragility of the system to shocks to the financial system also rises. As the next paragraphs suggest, Argentina has suffered from both maladies during the 1990s.

Figure 5 highlights Argentina's "level problem." Regardless of how it is measured, and despite significant improvements over the last decade, Argentina's financial markets and level of financial intermediation are sub-standard. M3, loans, and stock market capitalization–all listed as a fraction of GDP–fare poorly, both within the region and certainly with respect to OECD economies.[6]

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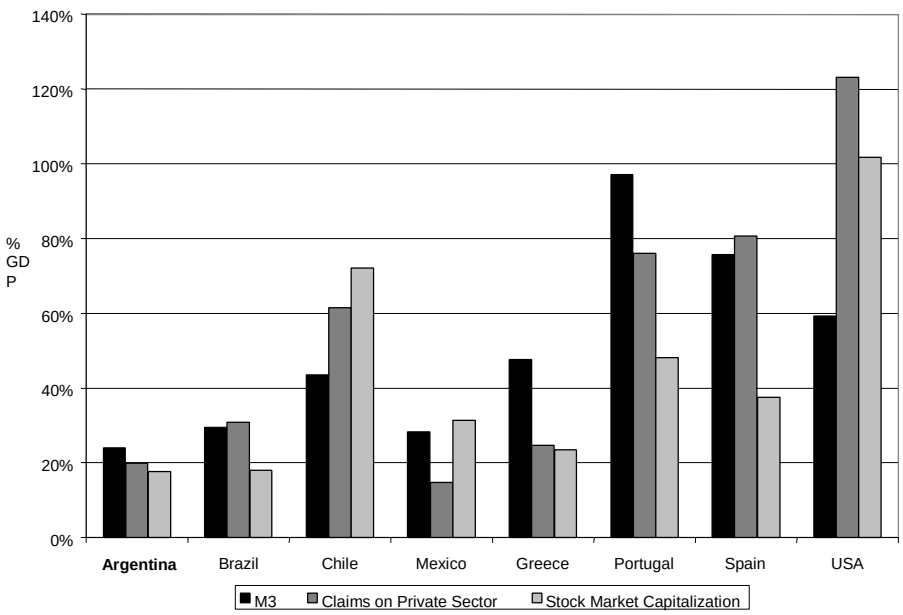
[5] It is worth highlighting, nonetheless, that Argentina has been given "the benefit of the doubt" in terms of its ability and willingness to repay beyond that of the typical emerging economy. See the discussion of this issue in the concluding section.

[6] Although the comparison with Mexico may seem favorable, one has to consider that Mexico's banking sector was severely damaged by the "tequila" crisis.

Figure 5: Financial Markets Development



Notes: Data as of end of 1997.

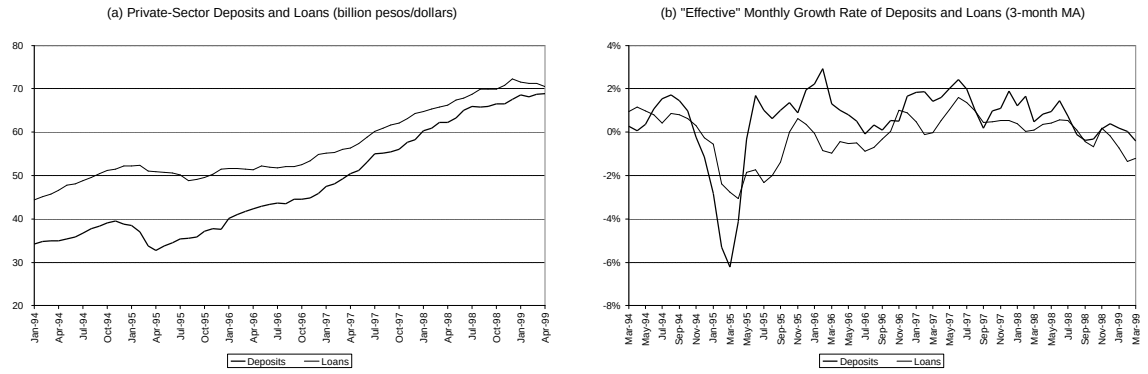
Source: M3 and loans to private from IFS. Stock market capitalization from Datastream (broad but not complete coverage).

In one way or another, domestic financial markets have played an important role during the two crises of the 1990s. Figure 6 highlights the "cyclical problem." Panel (a) illustrates the path of deposits and loans, while panel (b) depicts the paths of the rate of growth of deposits minus the interest rate paid on deposits, and of the rate of growth of loans minus the lending rate. Albeit imperfect, these measures capture banks' and firms' flow availability and needs. The story behind the tequila crisis episode is clear and well known: fears that the convertibility system would not survive led to a run on banks and on the monetary base. As a result, there was a massive credit crunch despite the astute use of the few degrees of freedom with monetary policy allowed by the convertibility law.[7] It is apparent from that episode that loans, especially to the private sector, took longer to recover than deposits. This slow recovery of loans was caused by the government's

[7] The Banco Central de la República Argentina (BCRA) can buy Argentine treasury bonds denominated in dollars (which are counted as reserves) as long as this does not lead to a decline in the ratio of international reserves (net of these bonds) to base below 2/3. Government notes in the BCRA rose by about 25 percent from 1994 to 1995 (from 1901 to 2543 billion pesos), and have declined sharply since then.

crowding out (see below) as it borrowed to pay back for its "monetary" intervention, and by the sharp consolidation process following the crisis that affected the Argentine (if it can be called such, since it is mostly foreign by now) banking sector.

Figure 6: Behavior of Private-Sector Deposits and Loans



Notes: In panel (b), the term "effective" refers to the fact that corresponding interest rates were substracted from the growth rates. CD rates (30-59 days) were used as deposit rates. Credit-line rates were used as loan rates.

Source: BCRA.

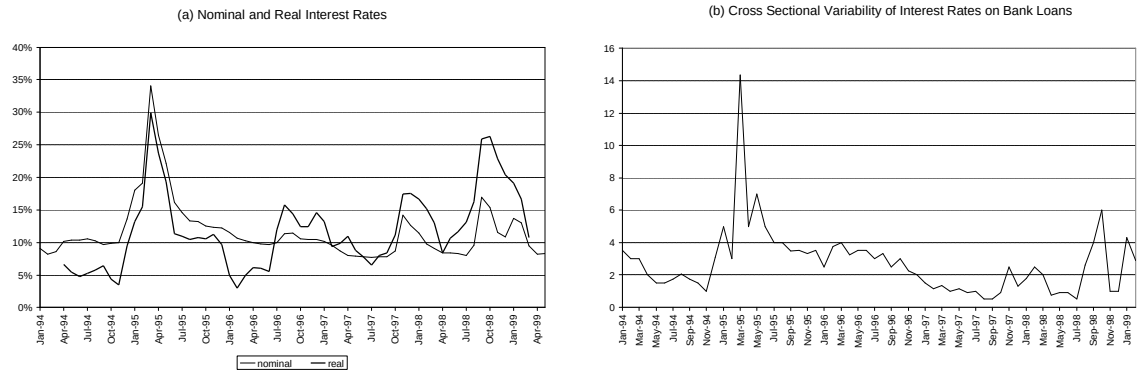
Prompted by the deep economic distress experienced during the tequila crisis, Argentina mounted a massive effort to improve the liquidity position of banks and the financial system as a whole. Not only were banks' liquidity requirements raised (in effect providing self-insurance), but explicit insurance features were introduced through a series of domestic as well as international "repo" facilities. The effort paid off, as there were no traces of systemic bank runs during the recent crisis, and lending slowed down but not nearly as sharply as during the previous crisis.[8]

For several reasons, the aggregate figure on loans is somewhat misleading regarding the extent to which reduced domestic intermediation and financial distress contributed the sharp decline in real activity during the recent crisis. First, the increase in financial depth during the last five years has in all likelihood made the economy more

[8] See Figure 3 in Powell (1999) for clear evidence on the improved systemic liquidity of the Argentine financial system. As described in that figure, starting from January of 1996, liquidity requirement increased steadily from 10 percent of deposits to over 15 percent by March of 1999. Excess reserves add a more or less constant 10 percent, and the "repo" program adds yet another 10 percent starting in January of 1997.

credit dependent. Second, the expected deflation required to adjust the real exchange rate within the context of the convertibility-law points at a real interest rate that rose more than nominal rates did. This is confirmed by panel (a) in Figure 7, which reports the monthly path of the nominal rates on 30-day peso loans to prime firms and, more significantly, the same rate minus a measure of expected inflation in producer price indices (see note in figure).

Figure 7: Interest Rates



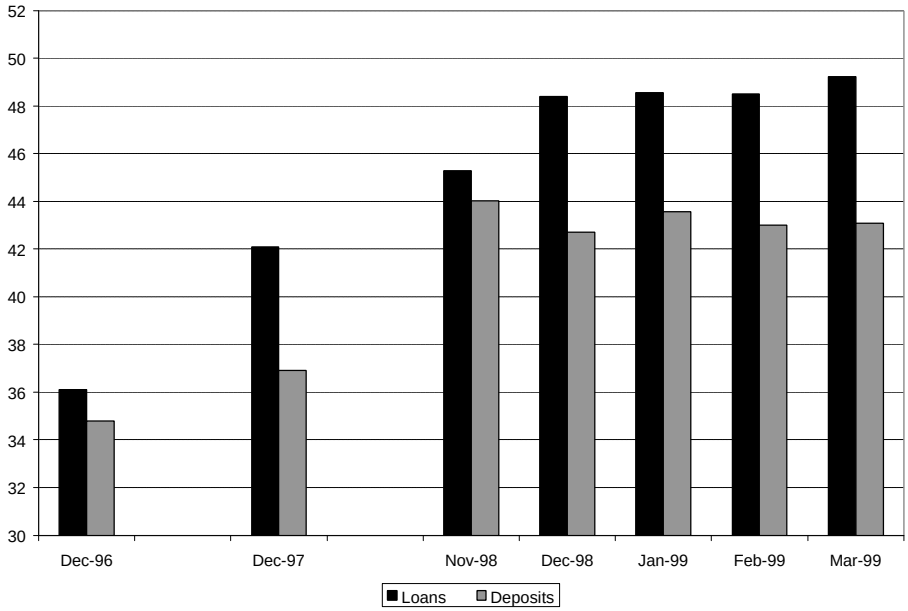
Notes: (a) Annualized 30-day peso loans to prime firms. Real interest rate calculated by subtracting annualized, centered, 6-month PPI inflation from nominal rate. (b) Interquantile range 75%-25% of cross section of nominal interest rates on 30-day peso loans.

Sources: interest rates from BCRA, PPI from INDEC.

It is apparent that the surge in nominal rates during the current crisis significantly underestimates the producers' perceived cost of credit. Third, the composition of borrowers and lenders may have changed significantly during the crisis. Panel (b) in Figure 7 shows the increase in the cross-sectional dispersion of prime loan rates which, while not nearly as large as those in the tequila crisis, probably reflects widespread local financial bottlenecks. Along the same lines, Figure 8 reports the reallocation of deposits and loans within the banking sector toward the larger banks. This probably resulted in a credit crunch on the clients of smaller banks, which are likely to be biased toward small and medium-sized enterprises (abbreviated in Spanish as PYMES). This negative picture for the PYMES is worsened by the fact that large firms, facing more difficult prospects in international financial markets, turned to domestic financial markets and banks for

their financial needs (see the next section's discussion of this "crowding-out" mechanism). These two facts combined probably explain why the share of loans made by large banks continued to rise over the period.

Figure 8: Share of Deposits and Loans in Top 10 Banks



Notes: Size determined by assets.

Source: BCRA. Data for Dec-96 and Nov-98 was obtained from an earlier report. Comparisons between the two sets of data should be done with caution.

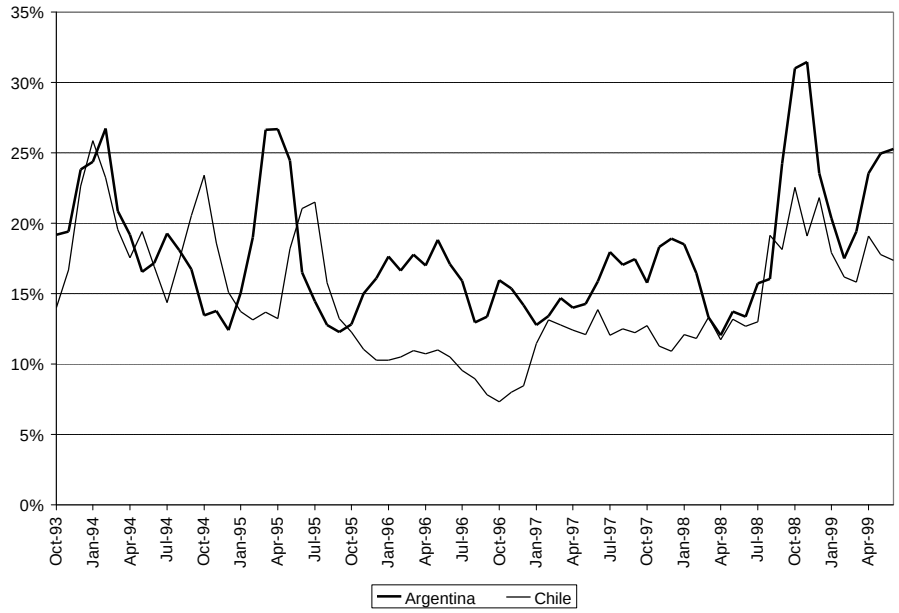
Figure 9 shows the path of a measure of the cross-sectional dispersion of the stock market returns for a group of twenty industries (thick line).[9] The figure demonstrates the dramatic surge in this cross-sectional dispersion during the crises.[10] As a comparison, the thin line illustrates the path of the same cross-sectional dispersion measure for Chile, which was affected by the same external shocks responsible for Argentina's crisis. Chile,

[9] The industries correspond to the stock market subsectors at level of disaggregation 5 of the Datastream classification, which includes 116 potential entries. For Argentina and Chile, twenty-six and twenty sectors, respectively, were represented during the period considered. Similar results were obtained by using different measures of dispersion.

[10] See Aguiar and Broner (1999) for an interesting and suggestive study of sectoral stock indices in Argentina and Mexico during the periods surrounding the crises of the 90s. Among other things, they illustrate the negative correlation between sectors' relative stock-return during crises, and these sectors' relative responsiveness to interest rates and credit variables during tranquil times.

a country with deeper financial markets, exhibited a much milder increase in dispersion, suggesting that resource aggregation does play an important role in limiting the damage caused by crises.[11] Finding more direct evidence of this mechanism is an important research theme, as is the analysis of the effects of financial underdevelopment on the relative size and volatility of traditionally credit-users sectors.[12]

Figure 9: Cross-Sectional Variability of Sectoral Stock Returns



Notes: Interquantile range 15%-85% (3-month MA). See footnote 10 in the text.

Source: Datastream.

In summation, regardless of how it is measured, and despite significant progress which is likely to continue into the future, the depth of Argentina's financial markets and financial intermediation is significantly suboptimal. Banks were at the center of the

[11] Of course the argument is somewhat circular. One could argue that the shocks were larger for Argentina, hence the larger increase in dispersion–although it seems difficult to argue that by late 1998 Chile had been affected by a smaller terms of trade shock than Argentina. The implicit argument in the text, on the other hand, is that the shocks were of similar magnitude, but that the relative weaknesses of Argentina, including its sound (during recent crisis) but underdeveloped financial sector, were partly responsible for a larger response.

problem during the tequila crisis, when a run on deposits generated a massive credit crunch, and their lending behavior, as well as the internal reallocation of deposits, has not helped to smooth the current crisis. The increased dispersion of sectoral returns hints at the presence of significant problems with the aggregation and distribution of financial resources during crises. The crowding-out and collateral squeeze mechanisms described below reinforce this problem as they encourage a pronounced "flight-to-quality" process during crises.

2.3.2 The Crowding-Out Problem

Everywhere in the world, credit contractions cause the most damage to small and medium size firms, which have only a few financing options, often limited to a bank or two. How severe the crunch on these firms is depends not only on the behavior of banks, but also on the "quality" of the borrowers who become the primary target of overly-concerned banks' lending activity. Thus, crowding-out involves not only the government, but also the prime firms of the country.

The Government. Standard macroeconomic stabilization arguments indicate that fiscal deficits ought to be counter-cyclical. Latin American economies, unlike OECD nations, typically exhibit the opposite pattern; fiscal deficits are pro-cyclical rather than counter-cyclical.[13] This pattern has been interpreted as a seriously sub-optimal policy, and most likely the result of the financial constraints faced by the governments themselves. This assessment may be true, but it misses an important point: if external financial shocks are an important source of fluctuations, the economy should distribute the scarce available international resources across domestic economic agents so as to smooth their differences in financial distress. It is highly unlikely that government expenditure, unless used very selectively to solve financial distress in the private sector, is the right place to allocate the

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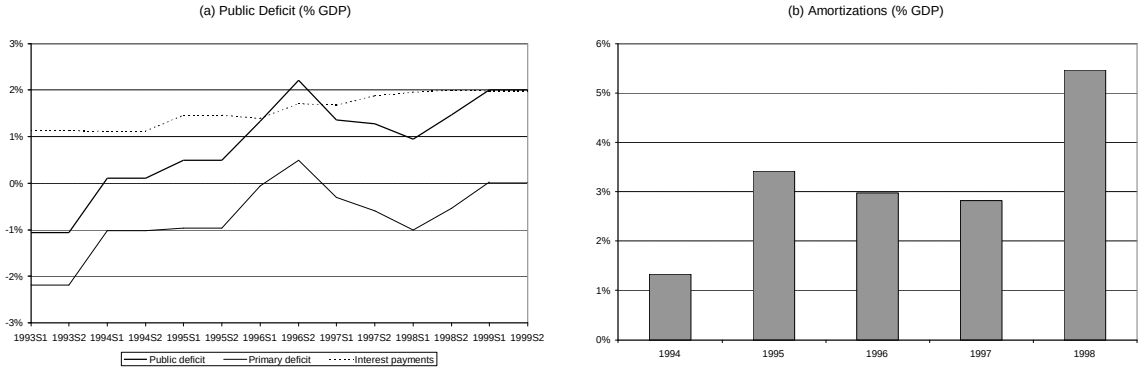
[12] See Rajan and Zingales (1998) for a comparison of relative sectoral size among OECD nations, and for evidence on the connection between this and the degree of development of local financial markets. A related theme worth exploring is that of the composition, as opposed to the level, of available domestic financial instruments. Is this composition very different from that of OECD nations'–e.g., in terms of the ratio of short and long term loans and bonds–and if so, which sectors and firms are most likely to suffer from such bias?

[13] See, e.g., IPES (1997) for a discussion of the pro-cyclical nature of fiscal deficits in Latin America.

marginal dollar.[14] Fiscal policy may need to be pro-cyclical after all.[15] Panel (a) in Figure 10 illustrates the path of Argentina's fiscal deficit, and its decomposition between the primary deficit and debt service. It is apparent that the fiscal side does not share in the adjustment. Panel (b) reports amortizations, which while generating no new net financing demand, add to the strain and uncertainty associated with large repayments due.

Figure 10: Public Finance



Notes: In panel (a), semester quantities were annualized. In addition, for years 1993-1995 semester data was not available and thus annual quantities were repeated for both semesters. 1999 data is predicted.

Source:: INDEC

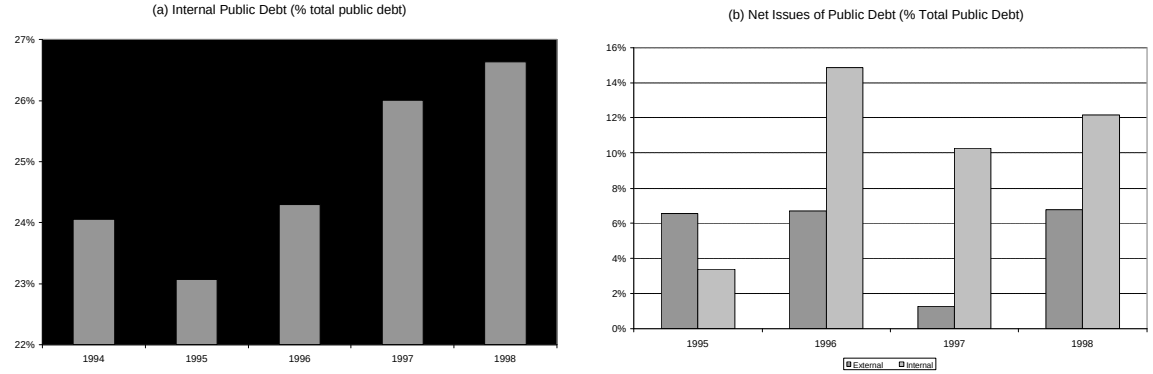
The lack of fiscal adjustment is not the only important dimension. One of the main features of financial crises is that funds lose their fungibility. It is no longer irrelevant where the government gets its funding. The first dimension to consider is whether the funding comes from domestic or foreign markets. Except for extreme cases of lack of fiscal discipline, which is not the case of Argentina today, it is the government that normally has the most opportunity to access international financial markets. Thus, the government should shift its financing away from domestic markets. Both the information on stocks (panel a) and flows (panel b) in Figure 11 reflect that the Argentine

[14] This also suggests that fiscal adjustments during crises ought to be carried out on the expenditure side rather than the tax side. If the latter is unavoidable, these adjustments should probably be targeted away from the supply side of the economy.

[15] This is an optimal policy argument, as opposed to the more standard argument that explains the fiscal pattern in terms of the financial constraints faced by the government itself. Which effect dominates depends on whether the private sector (perhaps a specific sector within it) or the government faces the tightest financial constraints during the crisis.

government has not succeeded in doing so during the current crisis. While there has been a decline in the relative growth of domestic as compared to external debt, the positive numbers in 1995 probably reflects a general contraction of domestic financial markets rather than a voluntary retrenchment–a conjecture supported by Figure 12 (b) below.

Figure 11: Public Financing Through Domestic Markets



Source: INDEC.

International crowding out is probably not too important.[16] This is true particularly because, as panel (a) in figure 12 illustrates, a significant share of government's borrowing abroad during crises comes from international organizations, which are probably more difficult to access directly by the private sector.[17] Conversely, domestic crowding out can be significant. Who buys the domestic debt, and whether these sources are available to the private sector as well, are important questions. In particular, does the government facilitate a "flight-to-quality" process? Panel (b) illustrates the share of domestic resources that come from banks and other domestic financial institutions or from AFJPs. Panel (c) shows the percentage of AFJPs assets allocated to government instruments (the maximum allowed is 50%).[18] Panel (d) shows

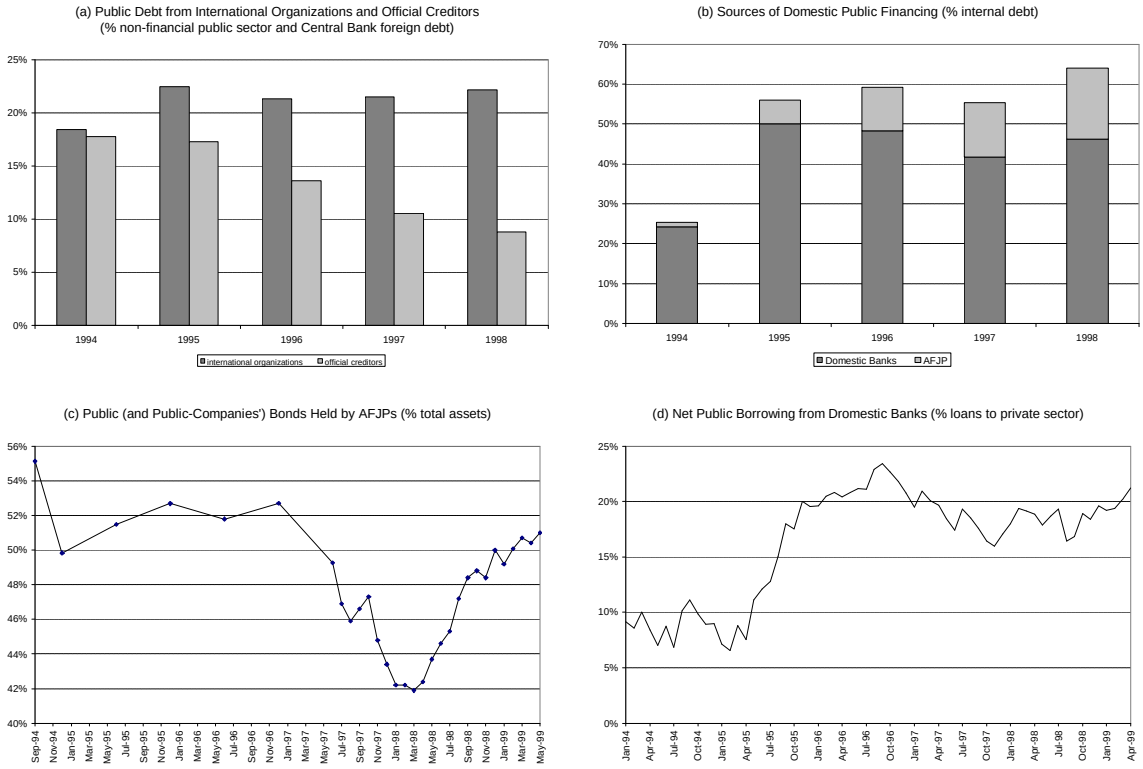
[16] The opposite could conceivably occur during crises. The government's success in placing debt in international markets, as well as its "road-shows," may facilitate the private sector's access to these markets.

[17] Of course, it would have been better had the government borrowed those resources not to solve its own fiscal imbalances, but to support a financially distressed private sector.

[18] It is difficult to tell from this figure how much of the fluctuation in allocations is due to volumes and how much is due to prices.

net public borrowing from banks as a percentage of bank credit to the private sector. It is apparent from the figure that during the tequila crisis the government turned to the domestic banks for financing, and in fact much of the slow recovery of loans to the private sector, which was slower than that of deposits, can be attributed to this shift. However, during the recent episode the government seems to have redirected its financing efforts toward the AFJPs, which can now absorb larger volumes of bonds than they did in 1995.

Figure 12: Public Sector Crowding Out

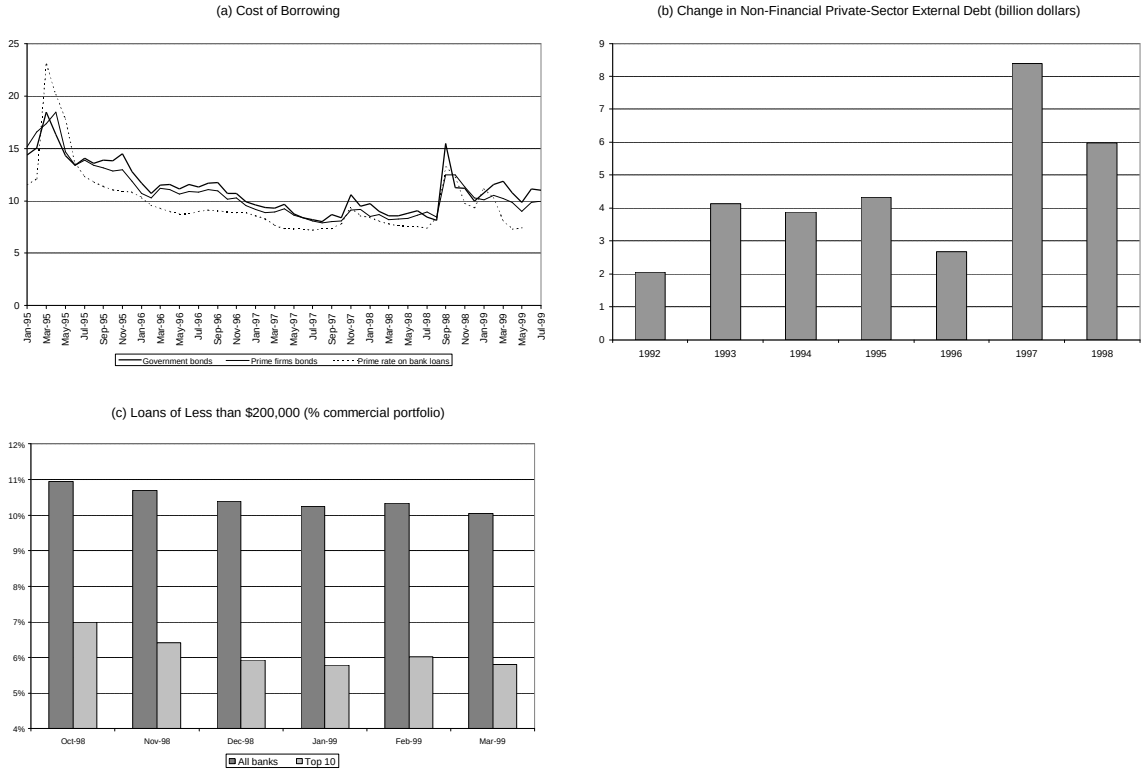


Source: Panel (a): INDEC. Panel (b): INDEC and SAFJP. Panel (c): SAFJP. After Dec-98, only have national government's bonds. "Pasted" the two series. For early years, only data for June and December are available. Panel (d): BCRA.

Large firms. There are many dimensions along which large domestic firms play a role similar to that of the government. For example, their financial and productive health is important to the country's international image, a point to which I return in the policy section. The most significant similarity in this section, however, is the crowding out of

PYMEs from domestic financial markets. As external financing tightens for large firms, they turn to domestic markets as preferred customers, exacerbating the ongoing "flight-to-quality" process. The social cost of this strategy, nonetheless, is that PYMEs generally do not have access to international financial markets, regardless of price.

Figure 13: Prime Firms Crowding Out



Notes: (a) Average implicit return on non-Brady sovereign bonds. Average implicit return on bonds of top Argentine companies. (YPF Sociedad Anonima 8% 1994-2004, Banco de Galicia 9% 1993-2003, Banco Rio de la Plata 8 3/4% 1993-2003)

Source: Panel (a): Datastream. Prime rate for 30-days bank loans in US dollars: BCRA, Panel (b): Ministry of Economy. (c) Source BCRA.

Panel (a) in Figure 13 illustrates the path of several dollar interest rates in order to capture, albeit imperfectly, the cost of credit for prime Argentine firms. The solid lines correspond to sovereign and corporate bonds rates, while the dashed line represents a benchmark short-term rate, namely the domestic rate on 30-day bank loans in dollars. While it is apparent that during the credit crunch of the early crisis the domestic cost of

credit rose significantly for prime firms, in the most recent episode the opposite has occurred, perhaps reflecting the unraveling of a considerable domestic flight-to-quality.[19]

Panel (b) shows the path of the non-financial sector's foreign borrowing, while panel (c) portrays the share of commercial loans allocated to small loans. The former panel shows that whereas, during the 1995 crisis most of the decline in capital flows occurred in the financial private sector (see Figure 3), it has been the non-financial private sector (in all likelihood, large corporations) that has shown the largest decline in capital inflows during the current crisis. The bottom panel, on the other hand, reflects a decline in the share of small loans during the current crisis, particularly by large banks. Both of these developments suggest a relative tightening for smaller firms.[20]

To summarize, while aware of the acute problems caused by domestic crowding out during crises, the government has not been able to avoid it. During the crisis of 1995 and the subsequent recovery, the government tapped on the domestic banks, while during the current crisis it turned to the AFJPs and domestic financial markets. Large firms, at least during the current crisis, seem to have behaved similarly and turned their demand for credit inwards, perhaps aided by an all-too-willing and conservative domestic banking sector.

2.3.3 The Inflexibility Problem (Claustrophobia)

While the credit crunch experienced by the Argentine economy during 1995 could probably not have been averted by a more flexible real wage, it is probably true that in the current episode such rigidity enhanced the crisis by generating a "collateral squeeze" (that is, a decline in the appeal of the firm's outlook from the point of view of the banks).[21]

Although significant reforms are underway, Argentina has European-style labor market institutions and traditions. On one hand, the faster growth of Argentina relative to

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[19] While the secondary market price of bonds may not reflect the cost of new financing, the qualitative feature of the figure, at least across the two crises, should be robust to these differences.

[20] The last two paragraphs hint at another potentially interesting research theme: That of the behavior of large firms during crises, and their role in smoothing or amplifying them.

[21] Of course, one could argue that with real wage flexibility, particularly through exchange rate flexibility, the run on deposits and the ensuing credit crunch perhaps would have been avoided altogether.

Europe may make these institutions more bearable. More importantly, labor market rigidities combined with the problems described above generate a significantly more disturbing scenario. When dealing with large external shocks and unyielding fiscal pressure, firms are severely squeezed from two complementary ends: financial and labor markets.

There are many forms of labor market rigidities, not all of which have the same costs in terms of aggregate volatility. Ultimately, nonetheless, an inflexible labor market yields costs of labor, not all of which come in the form of wages, that are too slow to adapt to sharp downturns. While in theory these frictions are mostly real, in practice nominal and real factors are easily confounded, particularly in the face of rapidly changing nominal events. It is in this context that allowing the currency to depreciate may in some circumstances generate some "breathing space."[22] Mexico's devaluation during the tequila crisis reduced manufacturing real unit costs by nearly twenty five percent in 1995, a gain that had not been undone even as late as 1998 (last observation).

While real wage rigidities are often the chief concern in a scenario with hard labor market institutions, the combination of extremely low world inflation with the fixed exchange rate built into the currency board, poses a question which was almost unthinkable a decade ago in Argentina: Is it possible that the "psychological" zero wage-inflation floor has become a chief constraint during this crisis?

Figure 14 seems to support this nominal-rigidity conclusion. Panel (a) portrays the year-to-year rate of inflation in producers' prices and nominal wages. With a little bit of imagination, one can see the price-inflation series as a straight downward-sloping line, crossing zero with no difficulty. Despite the conventional wisdom on the matter, this decline is not purely due to the sharp decline in primary goods' prices (see panel b).[23] Going back to panel (a), the wage-inflation series comes down early on as well, but then "flattens at zero."

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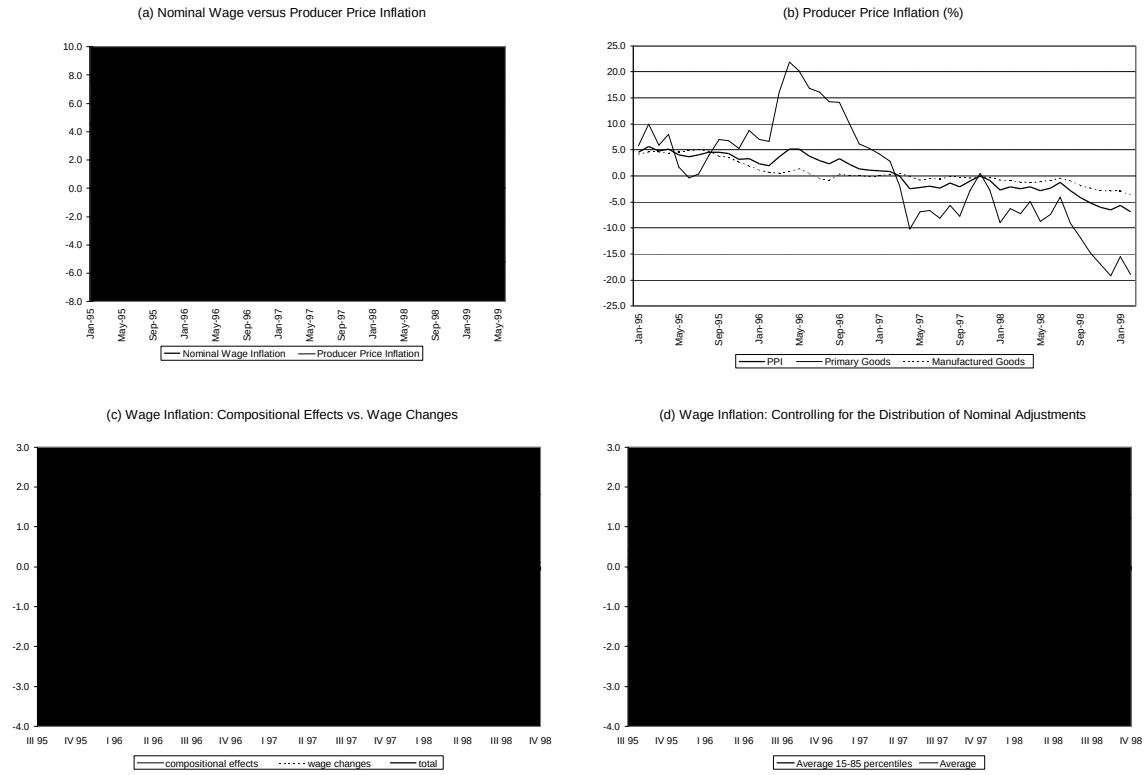
[22] Of course, there are costs associated with a currency depreciation as well; particularly on the financial side where balance sheets and collateral may be severely harmed by a sudden change in the exchange rate (see Caballero and Krishnamurthy 1998). There is no doubt that in Argentina today these costs overwhelm any potential benefits from a devaluation. This will be discussed further in the policy section.

[23] The CPI, on the other hand, behaves much like wages. Why there is so much difference between CPI and PPI is an important research question.

Figure 14: Wages and Inflation



Notes: (a) and (b): Yearly inflation for previous 12 months. (c): Decomposition based on 24-sector disaggredated data. Compositional effect computed keeping previous period sectoral wages constant, wage changes computed keeping sectoral composition constant. (d): First average obtained eliminating the top and bottom 15% of the distribution.

Source: Ministry of Economy and INDEC.

Indeed, this description does not require much imagination, but for the wage-deflation of 1996. However, panels (c) and (d) account for most of the 1996 wage deflation in terms of a compositional effect and a few outliers.[24] The former panel breaks down the path of wage inflation into a compositional effect (thin-solid line), where wages are kept fixed within each sector but relative employment is allowed to change, and the complement, which captures the pure wage effect. The point worth noting is that about a third of the wage deflation can be captured by compositional effects.

[24] These are outliers not in the sense of measurement error, but in that nominal rigidities are not very relevant for sectors in deep distress and with high turnover rates (e.g., construction).

The thick-solid line in panel (d) explains the rest. It represents the mean of the distribution of cross sectional wage inflation once fifteen percent of the observations from each tail have been removed. The figure shows that sharp wage disinflations in a few sectors account for much of the overall wage deflation during 1996 that was left unexplained by compositional effects alone.[25]

Claustrophobia. The relative rigidity of wages in Argentina during crises underestimates the extent of the relative rigidity of the Argentine system. On one hand, countries with more flexible exchange rate systems may choose not to utilize this flexibility as much in the midst of a crisis, when controlled devaluations are risky to play with.[26] On the other hand, and more significantly, in Argentina lack of real exchange rate adjustment today comes along with lack of adjustment in the near future as well. The perceived present value of overvaluations relative to crisis overvaluations is likely to be higher in the Argentine system. This concept is difficult to measure, although some information can be obtained from peso-dollar spreads, stock markets and real activity.

Much has been said about the advantage of a fully credible exchange rate for the peso-dollar spread. This is supported by the top panel of Figure 15, which illustrates the path of nominal interest rates in Argentina, Mexico and Brazil, most of which is indeed tied to the uncertainty surrounding the respective currencies. But there is another facet to this: the credibility of the exchange rate also means that the exchange rate is not expected to adjust in the near future even if doing so would help during the recovery. That is, a crisis that brings about a perceived overvaluation (e.g., as a result of a devaluation by neighbors or a large terms-of-trade shock) has no hope of being resolved quickly. This depresses effective loan demand, both for purely neoclassical as well as financial constraint reasons. These circumstances may be part of the reason why it is not only the peso-dollar spread that does not rise as much in Argentina, but also that the real interest rate level remains more subdued.

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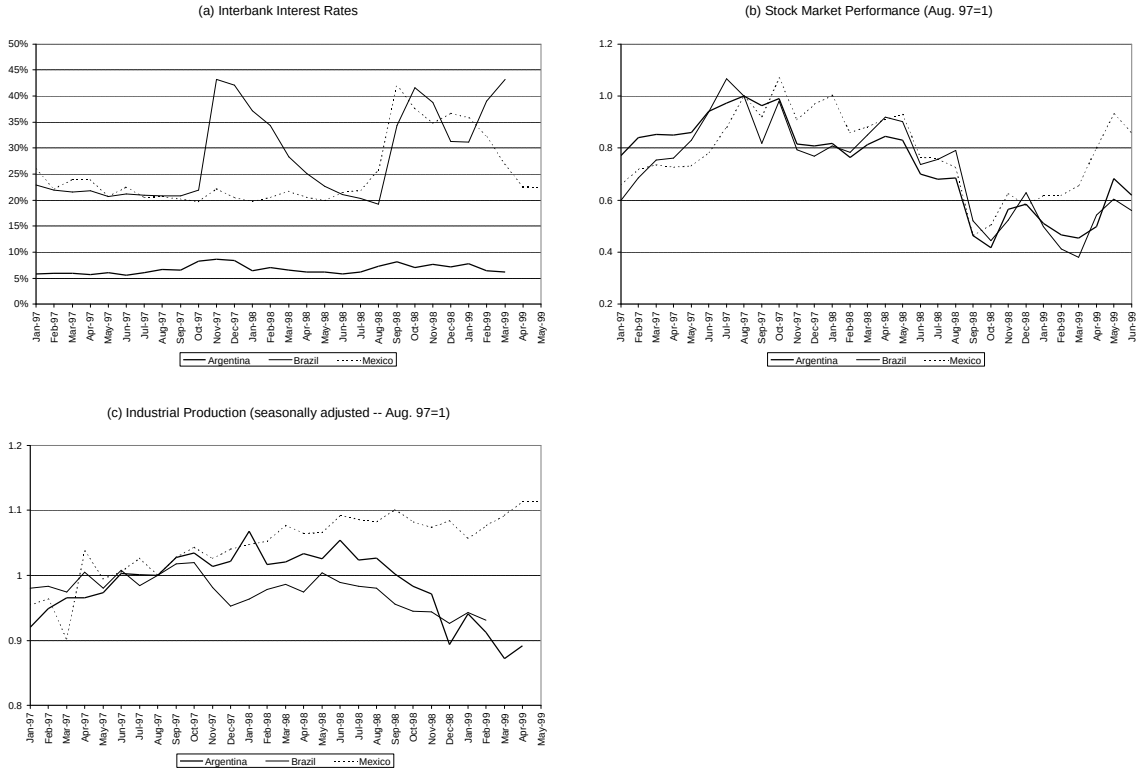
[25] This discussion hints at a potentially interesting research question for Argentina: How does the path of the histogram of microeconomic wage changes vary as inflation is gradually brought down by the convertibility system? See Card and Hyslop (1995) for U.S. evidence on nominal-wage-decline-resistance at the microeconomic level.

[26] See Hausmann *et al*. (1999) for preliminary but suggestive evidence on devaluation "refrainment."

Figure 15: Relative Performance: Argentina, Brazil, and Mexico



Source: Panel (a): Inter-bank interest rates from BCRA, Federal funds rate from Banco Central do Brasil, and inter-bank interest rates from Banco de Mexico. Panel (b) Source: Datastream. Panel (c) Sources: INDEC, Banco Central do Brasil, Banco de Mexico.

Thus, just comparing interest rates is not the proper measure of the relative distress across economies with different exchange rates systems and degree of labor market rigidities. The relation between these rates and the real side of the economy *changes* across these systems.[27] Panel (b) in Figure 15 shows that despite its better performance in terms of interest rates, the Argentine stock market did not perform as well, even when compared with Brazil, which was the regional epicenter of the current crisis. The bottom panel of the figure reinforces this conclusion by showing that

[27] There is some similarity between this claim and the "covert" rigidity result in Caballero and Hammour (1996). In that case, rigidities in the labor market were responsible for sharp unemployment spikes during recessions, while leaving no traces on the path of the real wage. In that case, the hiring rate fell excessively, dragging the wage down as a result. The analogue here is the sharp decline in investment and collateral (thus an increase in credit rationing) which keeps the interest rate subdued.

industrial production did not fare well in Argentina, either. Perhaps most significantly, while there is a sense that the other countries, especially Mexico, have left the worst behind, Argentina is still trapped in a highly uncertain scenario. The question arises whether the relative calm during the crisis has come at the cost of a slower recovery, and whether that was indeed anticipated by economic agents.[28]

To summarize, not only does the real wage seem to accommodate shocks less in Argentina than in other similarly distressed economies, perhaps due to a combination of real rigidities and exchange rate inflexibility, but a wage-deflation floor also seems to be taking its toll. Finally, there is very suggestive evidence that the relationship between interest rates and the real side changes significantly in the rigid Argentine system; judging the success of the system by the reduced volatility of its rates may thus be misguided.

3. Taking Stock

The diagnostic contains four basic elements: (i) limited and fragile links with international financial markets; (ii) domestic financial underdevelopment and recurrent credit crunches; (iii) a public debt problem with a multiple-layers crowding-out mechanism; and (iv) a claustrophobic system where real wage inflexibility is maximized by the combined effect of a rigid labor market, low world inflation and the convertibility law.

In accordance with these elements, the general policy recommendations highlighted in the introduction were grouped into four categories as well: (i) improve external financial links and their use during crises; (ii) continue and accelerate the development of domestic financial markets and intermediation; (iii) reduce the public debt burden; and (iv) develop reforms geared toward adding flexibility to labor costs, while preserving–not changing–the current exchange rate system. All these measures need to be combined with an attitude of "patience," as the passage of time (without a major disaster along the way) should ameliorate some of the problems. Perhaps most

[28] Of course, presidential political uncertainty has not helped Argentina, either.

prominently, the wage inflation "floor" which seems to be present at this time should eventually subside as an institutional feature.

While at a general level the connection between recommendations and diagnostic are apparent, there are specific aspects that are worth developing further.

3.1. Improving the Links with International Financial Markets

By now, there is a widespread consensus on a series of general recommendations to improve these links, which can be found in most "international financial architecture" pamphlets. These include norms of transparency and accountability, banks' sound practices for supervision, settlement, accounting and disclosure, aggregate risk management, and a series of related measures and practices aimed at improving the country's contractual environment and corporate governance.

At a general level, these recommendations need to be followed closely if international financial links are to be strengthened significantly. The recent Asian crisis brought this important issue to the fore. A recent example of the impact that good corporate governance standards have on investors makes the point clearly: The Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF), one of the largest institutional investors in the U.S. has made public that it simply does not invest in claims issued by companies with poor corporate governance standards.[29] Among its requirements are that: (i) a company's board consist of a substantial majority of independent directors (i.e., with no significant personal ties, current or past…); (ii) a company's board must obtain shareholders approval for actions that could alter the fundamental relationship between shareholders and the board; and (iii) companies must base executive compensations on a "pay for performance" system, and should provide full and clear disclosure of all significant compensation arrangements. It does not take much knowledge of Latin American corporations to realize that very few of them would make it onto TIAA-CREF's good corporate governance list.

[29] See pages 10-11 in the May 1999 issue of *Participant*, TIAA-CREF's quarterly news and performance magazine.

Importing and adapting to local conditions the corresponding laws and regulations from the developed world is probably the easiest step of all. The real obstacle is in their enforcement, which not only requires competent and fair courts, but in many instances also requires a deep "cultural" change.

In the meantime, arguably less important but more traditional factors also offer significant room for improvement. These include all the other main policy recommendations in this report, as reduced aggregate volatility and enhanced liquidity are central ingredients in deepening financial markets and links, as well as others:

i) Reducing the public debt problem would not only limit the volatility that stems from the perception of a fragile fiscal position, but it would also improve Argentina's credit rating. Its below-investment-grade status represents a major cost in terms of spreads and reduced participation of foreign institutional investors. Moreover, by the sovereign-principle, this low credit rating represents a major drag on the private sector's access to international financial markets as well. Table 2 illustrates this clearly, as Moody's rating sets at the sovereign ceiling most major Argentine corporations. S&P is a bit more lenient in the case of highly dollarized economies as it sees suspension of convertibility as an unlikely scenario; it is still apparent in this rating, nonetheless, that the sovereign credit anchor weighs heavily.

Table 2: Sovereign Credit Rating and Rating of Top Private Companies

Ratings	Sovereign	YPF	Metrogas	Telefónica	Edenor	Banco Rio	Perez Companc
S&P	BB	BBB-	N/A	N/A	BBB-	BB+	N/A
Moody's	Ba3	Ba3	Ba3	Ba3	Ba3	Ba3	B1

Source: S&P and Moody's.

ii) On a related point, large firms with access to international financial markets constitute one of the main sources of international collateral for an emerging country. Thus their credit ratings are "systemically" important as well, which means that there is an argument for promoting good performance along these lines.[30]

iii) Developing the domestic financial system and strengthening banks also would improve international financial links through two channels: first, by reducing overall volatility, and second, by increasing the country's capacity to intermediate foreign funds into PYMEs.[31,32]

iv) Naturally, improving labor costs flexibility would also reduce real volatility and hence make Argentina's claims more attractive.

v) The exports sector needs to grow and diversify. Diversification helps directly by reducing the variance of terms of trade. Growth improves the country's "collateral." Although at the microeconomic level many international financial transactions can be collateralized (explicitly or implicitly) with claims on non-tradables, as is often done with repos collateralized by mortgages, at the aggregate level the country's capacity to repay is an important consideration. While Argentina's foreign indebtedness as a fraction of its GDP is very reasonable, it is not so as a fraction of its exports. The same holds true for the country's flows. Large ratios of debt and current account deficits over exports can be thought of as a very illiquid and leveraged position before the rest of the world. In light of this, Figure 16 shows that the world's financial markets have certainly "trusted" Argentina more than they are typically willing to do with emerging economies. While panels (a) and (c) show that Argentine foreign debt and current account deficits are quite

[30] Understanding the impact of large firms' health and performance on the international perception of a country's international collateral value seems, in many respects, as important as the much more extensively studied role of the government's health in such perceptions. See Caballero and Krishnamurthy (1998) for a model of corporate-based international collateral.

[31] During the 1990s, over one third of Argentina's private sector international bonds have been issued by the financial sector. Interestingly, this share fell to only ten percent during the tequila crisis.

[32] See Caballero and Krishnamurthy (1998) for a formal framework that highlights the harmful interactions between fragile links with international financial markets and underdeveloped domestic financial markets.

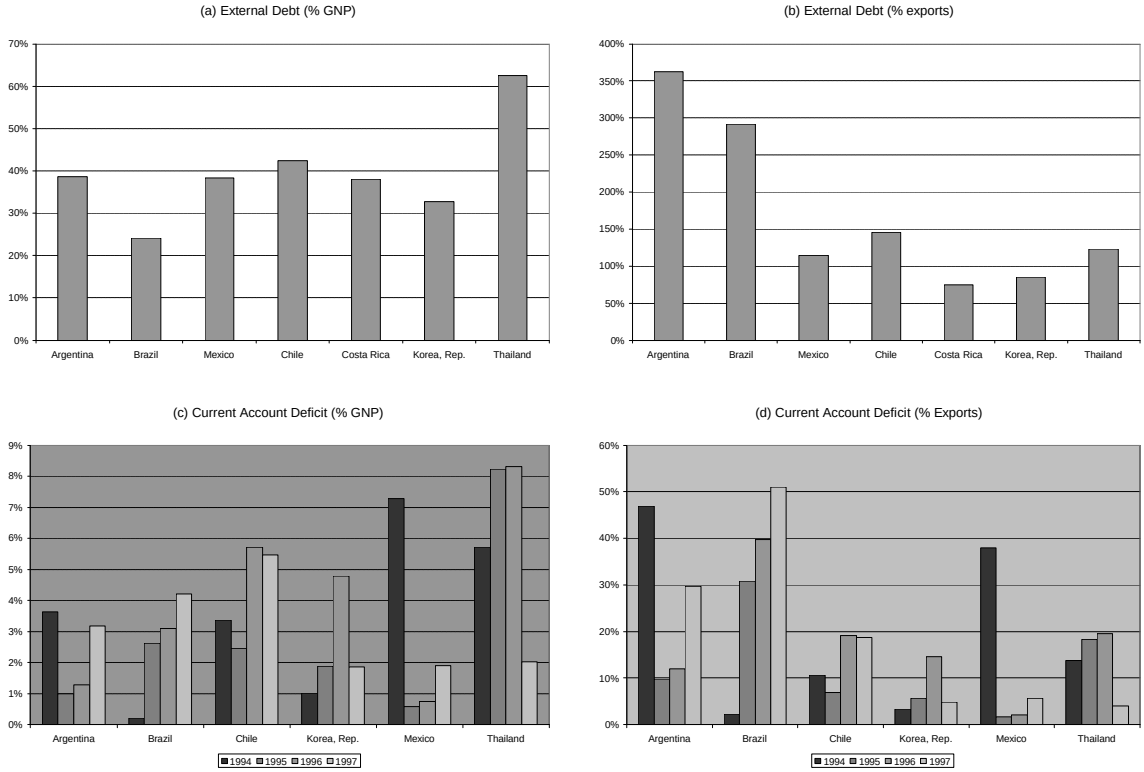
moderate when compared with that of other emerging economies, this is not the case once they are normalized by exports, as is shown in panels (b) and (d). External Argentine debt is 3.5 times its exports, probably a world record among substantially developed economies.

The possibility of forming a Latin American market with homogeneous financial instruments should be considered. The additional liquidity that a larger market would bring is a significant enhancement from the point of view of large foreign investors

In the meantime, the combination of weak international links, underdeveloped domestic financial markets and intermediation offers a clear case for taxing capital flows and mandating liquidity provisions.[33] However, one of the major costs of such policies is that they may further reduce the liquidity of Argentine asset markets. Measures of this type should be considered only in conjunction with measures aimed at fostering the development of these markets

[33] See Caballero and Krishnamurthy (1998) for a formal argument justifying this recommendation. In that paper, we show that weak international financial links alone are not enough to justify such intervention. It is the domestic markets problem, which leads to an undervaluation of international collateral provision.

Figure 16: External Debt Burden and Current Account Deficit



Notes: Panels (a) and (b) 1997 data.

Source: World Bank Global Development Finance 1999.

3.2. Fostering Domestic Financial Markets and Credit Flows

At a general level, the institutional and contractual reforms, as well as the stabilization measures described above, should have a direct impact on the development of domestic financial markets. In addition, there are a few considerations that concern domestic markets and banks particularly.

While the efficiency and direct costs of the Chilean private pension system are still a matter of debate, there is no doubt that the system had an enormous and positive impact on the development of domestic equity markets. Market capitalization over GDP hovers around a hundred percent today, whereas two decades ago it was non-existent.[34]

[34] However, see a companion report on Chile (Caballero 2000) for an important caveat on its high capitalization value based on the fact that its turnover ratio is unusually low.

There is no reason why AFJPs could not do the same in Argentina, except perhaps for the large share of their resources which is being absorbed by public instruments.

More generally, institutional investors play a central role in the development of domestic financial markets. Both their participation and their willingness to bid for long-term instruments depends on macroeconomic stability, as well as on the existence of an appropriate regulatory environment for these institutions. Since they can average illiquidity risks better than individual investors can, institutional investors naturally exploit the longer end of the maturity structure. The development of markets for long-term debt is of vital importance to Argentina, as well as the rest of Latin America. Moreover, institutional investors are likely to play a key role in promoting good corporate governance practices, as the TIAA-CREF example above illustrates. This is an efficient mechanism for delegating part of the monitoring and enforcement of good business practices to the private sector. Needless to say, institutional investors themselves need to be appropriately regulated and monitored.[35]

Perhaps as a result of the fire sales brought about by the tequila crisis, the lion's share of the banking sector is now in the hands of foreigners. For the most part, this has been hailed (if you can't develop a good supervisory, import it!). Indeed, foreign banks in Argentina today have their headquarters in countries with solid banking regulation. But there is another aspect of the story that receives less attention and is in principle a source of concern: In the event of a crisis, are their lending and investment practices similar to those of domestic banks? In particular, are they more inclined to halt lending at the first sight of systemic trouble? Do they lend mostly to prime firms, leaving PYMES more unprotected? Or do they, by offering a perceived "safe haven," facilitate a run on domestic banks during crises? These are key issues that need to be sorted out and dealt with, not in terms of limiting foreign banks' participation but in ensuring that precautions are taken against the potential side effects.

[35] See Blommestein (1997).

3.3. Controlling Fiscal Imbalances

In sharp contrast to the outstanding financial management of Argentina's public debt in recent years, the fiscal deficit has not been tamed. The situation is worse than it looks at first glance, since a series of accounting "practices" have underestimated Argentine public deficits.[36] Moreover, the health of the net asset position of the government today is overestimated relative to its past, since it does not consider the decline in assets due to privatizations.[37]

Aside from the "standard" recommendation to improve a noticeably poor tax collection record, there are at least two types of measures that, while clearly sub-optimal in the long run, may prove helpful in attenuating the crowding out and image problems in the short and medium run. The first is the passage (perhaps temporarily, say for the next five years) of a fiscal convertibility law, as is currently being discussed. While the availability of counter-cyclical fiscal policies is a blessing in normal, OECD-like circumstances, it is not of much use when the nature of the crisis is mostly one of loss of confidence by international financial markets. Thus the cost of losing this policy tool during the typical Argentine recession may not be large relative to the gains associated with a healthy fiscal stance during good times. A second possibility involves placing limits on the collateralizability of the provinces' co-participation receipts. It is very difficult for the government to control flows at any point in time if the provinces can borrow around any federal tightening.

Having discussed the fiscal situation, one is compelled to point out that the level of public debt over GDP in Argentina is *not* high relative to that of many developed economies. It is certainly much lower than in Italy and Belgium, for example. This seeming contradiction only highlights the large synergies between the different ingredients discussed in this report. Indeed, the level of public debt over GDP is a

[36] Essentially, the public debt accumulated over the last decade is too large for the deficits reported. The official explanation is that the difference is accounted by "under-the-line" items.
[37] This is just an accounting statement, not an argument against privatization.

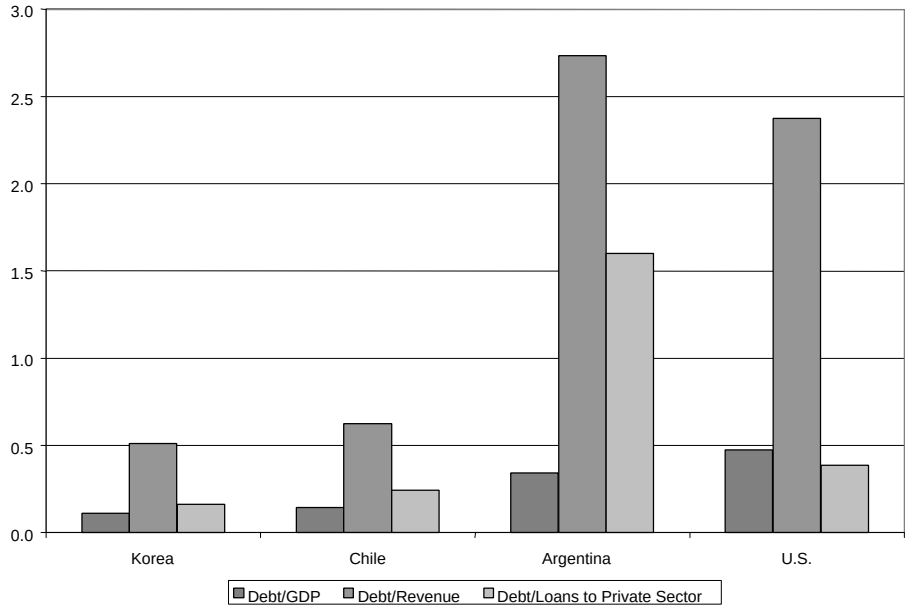
misleading statistic when compared to more advanced economies, precisely because the cost of servicing such debt is much higher in Argentina, especially during crises.[38]

But why is such a low level of debt charged such high spreads? And why should it be rated so low? There are at least two factors in the answers to these questions.

First, more advanced economies have a higher tax-yield than Argentina. Figure 17 shows that while the public debt to GDP ratio is significantly lower in Argentina than in the U.S., for example, the ranking turns around once public debt is divided by fiscal revenue rather than GDP. Since tax-yield is closely related to tax-capacity, the Argentine government has access to a significantly lower share of GDP for repayments.

[38] Nonetheless, Argentina's efforts to lengthen the maturity of public debt have paid off in terms of the costs of spikes. The amount of debt to be renewed in 1997 and 1998 was below 15% of the outstanding debt, which means that the interest rate spikes can account only for a small fraction of the increase in the ratio of interest payments to total debt observed during the last four years (from 10% in 1995 to 13% in 1998). On the other hand, the longer maturity of debt (rising from 3.3 years in 1994 to 14.9 years in 1997) associated with a steep yield curve surely contributed to this worrying trend (another important cause of the increase in interest payments was the termination of a series of concessional loans available from international institutions.) Apart from the clear advantages of an evenly spaced schedule of payments that prevents disorderly confidence crisis, it is less clear what is the best maturity structure from the point of view of the level and variability of interest payments for a country facing a high variability of international interest rates and a steep yield curve, which moreover appears to steepen in crisis times. Back of the envelope calculations show that the increases in the interest payments to debt ratio from 1995 to 1998 may account for 5% of the existing debt stock in 1998.

Figure 17: Public Debt under Different Metrics



Notes: All data are from 1997 but Argentina's Debt/Revenue which is for 1996.
Source: IFS.

Second, and perhaps more interestingly for its nearly self-fulfilling implications, Argentine public debt is more illiquid and subject to highly volatile spreads, reflecting many of the problems described in this report. One dimension of this illiquidity is illustrated by the third bars in Figure 17, which represent the size of public debt relative to an indicator of domestic financial markets depth. Argentina's fiscal position looks very weak along this dimension. This is important, since domestic markets are likely to constitute the support market for such instruments (i.e., the market that stays even in bad times).

3.4. Dealing with Inflexibility

Traditionally rigid and unionized Argentine labor markets are now facing an additional constraint brought about by the need for nominal wage *deflation* during crises. Besides the obvious volatility costs stemming from labor cost rigidities, there are indirect costs which come from induced capital deepening. Such a strategy often brings about higher

leverage ratios and more dependence on external financial flows, which are important sources of volatility in themselves.[39]

The ongoing process of labor reform should help alleviate traditional real rigidities. Perhaps a step back in terms of these reforms is the elimination of "temporary contracts." While such a measure seems appropriate in light of the unsuccessful European experience with this form of contracts as a mechanism for fighting structural unemployment, it may not be so if the main goal is to fight bursts in cyclical unemployment during steep crises. The tension between structural damage and cyclical benefits can be dealt with by making temporary contracts contingent on aggregate conditions (i.e., only acceptable during recessions).

In the short run, reforms aimed at reducing the non-wage component of labor costs should be fast-tracked, but this must be accompanied by offsetting fiscal adjustments so as not to further expose a fragile fiscal situation. At this time, supply incentives should have a higher payoff than demand incentives, justifying the tradeoff.

As for nominal rigidity, there is not much that can be done without incurring great risks. Given the current exchange rate system, nominal rigidities will fade away with the passage of time, and sustained low inflation, rather than with deregulation.[40] If it were not for all the turmoil that discussing such a change would entail, I would argue that adding two to three percent of rigidly automatic nominal depreciation to the peso over the dollar might be reasonable anti-crisis insurance–at least while OECD nations insist on dangerously low inflation levels as their targets.[41] But for Argentina such an option is out

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[39] See Caballero and Hammour (1998a) for a discussion of the French capital deepening experience. This represents another interesting research area for Argentina: is there an ongoing capital deepening process? Does it show up in industries and sectors where labor protection and regulation is most severe? Are firms in these sectors disproportionately responsible for Argentina's leverage? And so on. Also, see Caballero and Hammour (1998b) for a discussion of "elastification," the process whereby regulated labor markets eventually increase the employment response to changes in aggregate conditions, particularly as capital is given new opportunities.

[40] After the Brazilian devaluation, the Argentine authorities tried to compensate for it by moving forward the reduction of employers' contributions. Unfortunately, opportunities like this one cannot be counted on in a long-term strategy.

[41] See the concluding section of the project for a discussion of the desirable properties of exchange rate systems that have strong long-term nominal anchors, cannot jump at high frequency, but allow some real flexibility at high-to-medium frequencies. I refer to these somewhat utopian exchange rate systems as *anchored-viscous.*

of the question in the short and medium run. Any reversal in the exchange rate system should be announced with years of warning to prevent major collateral damage and disarray, and it should not take place until the fiscal situation is finally remedied if inflationary expectations are to be contained.

What about the other extreme, dollarization? When the decision seems to be driven by short-term panic rather than a long-term perspective it is probably not a good idea. While it has certainly been wise to discuss the issue in the midst of the crisis, it is probably not a good idea to actually implement it. Given the near irreversibility of the dollarization decision, it does not seem sound to adopt it unless long-run considerations support it, and this is highly unlikely (at least as a unilateral measure). Moreover, the short and medium term advantages of dollarization may have been exaggerated. First, the argument that dollarization will increase the appeal of Argentina's assets to foreign investors, while valid, is probably overoptimistic. With sovereign debt rated as it is, there is not much room for improvement in corporate ratings either. Second, and related, the idea that future seignorage could be used as public international collateral ignores the fact that current reserves, especially those in T-bills, could play a similar role in the current system. Third, while Argentina's other fundamental problems are not fixed, the "desired" equilibrium real exchange rate is bound to exhibit large fluctuations; thus it may not yet be time to permanenently surrender nominal exchange rate flexibility. This is particularly the case if dollarization is perceived as a substitute for deep reforms, a mistake that politicians are likely to make. Why risk an otherwise transparent and promising development strategy?

Appendix: Chronology

Trends:

1988-present: Opening to trade.

1991-1993: Major period of privatizations.

1990s: Income distribution worsens. Families below poverty line: 38.3% in October 1989, 11.9% in May 1994, 19% in October 1997. Real wages decline slightly.

1995-present: Share of foreign banks increases to 40%. Number of banks falls from 168 to 113 (1997).

1991-present: Stock market capitalization/GDP rises from 2.4% to 17% (1997).

1995-present: Pension funds US$9 billion.

1996-present: Investment funds rise from US$600 million to US$6 billion.

1990s: Massive capital inflows and corresponding increase in foreign reserves.

1990s: Pre-tequila expansion driven by consumption boom (until 1993). Post-tequila expansion is driven by investment boom (beginning in 1994 and continuing after the crisis). Manufacturing growth is below GDP growth in the pre-tequila period and above GDP growth in the post-tequila.

Developments and Events

1989:

Overall: The foreign investment law is amended, and most investment barriers are lifted.

May: Menem is elected.

July: Alfonsin leaves office six months early due to hyperinflation.

July-December: Stabilization attempt ends in another hyperinflation.

August: Congress passes the Economic Emergency Law and Law for the Reform of the State which, respectively, allow the government to take swift measures to stop hyperinflation (cuts in expenditure, price controls, etc.) and to start a privatization process.

September: Argentina reaches agreement with IMF and receives US$1.5 billion stand-by loan.

October: CGT (major labor organization) splits.

1990:

Overall: Tax penalty law is imposed.

January: Argentina experiences a drastic liquidity squeeze, unilaterally rescheduling internal debt (10-year bonds for CDs).

March-December: Stabilization attempt ends in high inflation.

February: VAT for goods is introduced.

November: VAT for services is introduced.

1991:

Overall: Federal government begins to devolve education and health services to the provinces.

February: A new tax package eliminates export taxes and lowers taxes on financial transactions.

March: Mercosur is established.

April: Convertibility begins. All outstanding domestic public debt is consolidated into long-term bonds.

1992:

Overall: The CGT reunites, but the government is still able to keep labor movements divided and ineffective.

March: IMF approves Extended Fund Facility.

September: New central bank charter provides for independence of monetary authorities prohibits financing of public sector deficit, and removes lender-of-last-resort functions.

December: Tax code reforms make evasion more difficult. Foreign debt is restructured through Brady plan, with US$27 billion exchanged for bonds. Banks regain access to international capital markets.

1993:

Overall: Provincial governments' aggregate spending registers an increase of 60% over 1991, with including a wage increase of 66%. Argentine companies are allowed to access international capital markets through American Depository Receipts (ADRs).

August: The Federal Fiscal Pact is introduced to strengthen fiscal adjustment in provinces.

October: Pension reform law.

November: Agreement is reached on reforming the constitution.

1994:

Overall: Argentina is unable to comply with IMF fiscal targets as a result of overspending. International interest rates rise.

June: A private pension system is created (partly public pay-as-you-go, with a complementary private capitalized system for supplementary pensions). This system is expected to channel about US$3 billion a year to capital markets. In transition period, shift in payments to private system increases fiscal deficit by close to 1% of GDP.

July: New constitution is adopted.

November: All pending government expenditure is cut off for the remainder of the year. The 1995 budget is reduced by US$1 billion.

December: Mexico devalues its currency.

1995:

Overall: Mexican crisis leads to a recession, with a 17.6% loss in deposits (US$8 billion) and a 30% loss in reserves (US$4.8 billion). Unemployment increases to 18.4%, and net capital inflows fall from US$10.7 billion in 1994 to US$2.7 billion in 1995. Trade balance improves.

January: Commercial banks are forced to convert reserve deposits at central bank into dollars.

February-March: Export subsidies and public wages are reduced, while VAT is increased. Good terms of trade and an increase in exports help to make the crisis less severe. An international financial package of US$11 billion is arranged. Interest rates are increased to avoid a run on the currency, and additional measures are undertaken to avoid bank failures and increase liquidity. The central bank charter is modified to provide greater flexibility in managing liquidity crises. Pressure is exerted on provinces to privatize provincial banks.

May: Bank deposits begin to recover, but bank credit remains depressed. Menem is reelected.

1996:

Overall: Reforms in banking sector establish a safety net with higher reserve and capital requirements. When the contingency safety net is taken into account, liquid reserves are 30% of deposits. A domestic public debt market is developed, with new peso instruments of both short-term and 2-3 year maturity. Banks' liquidity holdings requirement is increased by 2%. Compulsory labor risk insurance (ART) is enacted. Pension funds reach US$3.6 billion, consisting of 51% in public debt instruments, 25% in term deposits, and 17 % in stocks and private-sector debt instruments.

July: Cavallo leaves office and is replaced by. Fernandez.

1997:

Overall: VAT makes up 52% of tax revenue (excluding social security contributions). Argentina holds US$6.1 billion in REPO with international banks (contingency credit lines). Investment funds grow fast (US$4 billion by mid year).

September: Foreign firms can be quoted on the stock exchange (through mechanism of *certificados de deposito argentino*). Foreign holdings are allowed to be included in pension fund portfolios.

October: Alianza party wins congressional elections. The Asian crisis goes almost unnoticed but for a fall in the stock market and declining external balances due to worsening terms of trade. The banking system remains solid, as deposits continue to rise.

1998:

Argentina signs a three-year extended fund agreement with IMF for US$2.8 billion. Tax reforms, though not major, include extension of VAT to previously exempted activities and a "single tax" for small businesses and the self-employed. No major changes occur in labor issues, but some existing flexible labor contracts are eliminated. Intergovernmental revenue issues are addressed by a guaranteed minimum level of "*coparticipación*," though the common pool problem is still unresolved since half of provinces' revenues

come from *coparticipación*, with little incentives to fight tax evasion. Russian crisis makes less foreign capital available, but there is no capital flight. Stock market falls. Prices of both exports and imports fall. Recession in Brazil leads to an incipient recession in Argentina.

1999:

Overall: Brazilian enters economic crisis. The peso becomes even more overvalued as Brazilian and other Latin American currencies fall. Exports fall dramatically, especially to Brazil. As the recession reduces imports, however, the trade balance starts to show surpluses. As interest payments start rising due to increased country risk (due to political uncertainties), current account still does not improve much. The depth of the recession surprises most analysts: it is now predicted that GDP will fall more than during the Tequila crisis.

The government introduces measures to reduce labor costs (through lower payroll taxes), promote exports, monitor imports for evidence of "dumping, " and ease access to credit, especially for PYMEs. Additional measures are undertaken for specific sectors such as automotives and agriculture. Although the Central Bank refuses to reduce liquidity requirements, a plan is under discussion to refinance loans to PYMEs held by the Banco Nacion.

Although the financial system is still very strong, a small number of institutions are closed following the Brazilian devaluation. Private sector loans are flat for the first semester, although non-financial public sector borrowing has increased sharply.

The practice of covering government financing needs several months in advance is kept in effect, and Argentina is able to return to international capital markets shortly after Brazil's devaluation. However, political uncertainties regarding the impending presidential elections sharply increase the country's risk-premium, which almost reaches Brazil's by mid-July.

April: IMF agrees to increase public deficit target by US$2 billion to $4.95 billion, on the grounds that the higher deficit resulted from external factors and not excessive spending, but the deficit is likely to be even higher. The 1998 tax reform, at first thought to provide

enough extra revenue to be able to eliminate payroll taxes, actually only dampens a still-significant drop in revenue. As part of the accord, the government agreed to five pieces of legislation: fiscal convertibility, conversion of Banco Nacion into SA, reforms to the Central Bank charter, reforms of the social security system, and an overhaul of the scheme for sharing tax revenue with the provinces. These changes do not seem likely to pass before the change of government (although the fiscal convertibility measure passes the chamber of deputies).

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